OFFICIAL REGISTER OF HARVARD UNIVERSITY

VOL. I APRIL 30, 1922 NO. 1

THE HARVARD SCHOOL OF PUBLIC HEALTH

LONGWOOD AVENUE, BOSTON, MASS.

1922-23

PUBLISHED BY HARVARD UNIVERSITY

ANNOUNCEMENT

OF THE

HARVARD SCHOOL OF PUBLIC HEALTH

LONGWOOD AVENUE, BOSTON, MASS.

OF

HARVARD UNIVERSITY

FOR

1922-23

PUBLISHED BY HARVARD UNIVERSITY

1922

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CONTENTS

CALENDAR

1922

Sept. 25, Monday. **Academic year begins.** Registration of Students. Payment of the first instalment of the tuition fee is required on or before this date.

Oct. 12, Thursday. Columbus Day: a holiday.

Nov. 30, Thursday. Thanksgiving Day: a holiday.

Recess from Dec. 23, 1922, through Jan. 2, 1923.

1923

Jan. 1, Monday. New Year's Day: a holiday.

Jan. 31, Wednesday. Payment of the second instalment of the tuition fee is required on or before this date.

Feb. 1, Thursday. **Second half-year begins.**

Feb. 22, Thursday. Washington's Birthday: a holiday.

Recess from April 16 through April 21.

May 30, Wednesday. Memorial Day: a holiday.

June 1, Friday. Examinations begin.

June 21, Thursday. **Commencement.**

Summer Vacation, from Commencement through September 22.

THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE

This Board is commonly known as the CORPORATION.

PRESIDENT

ABBOTT LAWRENCE LOWELL, A.B., LL.B., LL.D., PH.D.
17 Quincy St., Cambridge

FELLOWS

HENRY PICKERING WALCOTT, A.B., M.D., LL.D.
11 Waterhouse St., Cambridge

THOMAS NELSON PERKINS, A.B., LL.B. 60 State St., Boston

WILLIAM LAWRENCE, A.B., D.D., LL.D., D.C.L.
122 Commonwealth Ave., Boston

JOHN FARWELL MOORS, A.M., LL.D. 32 Mt. Vernon St., Boston

JAMES BYRNE, A.B., LL.B. 24 Broad St., New York, N.Y.

TREASURER

CHARLES FRANCIS ADAMS, A.B., LL.B. 50 State St., Boston

DEPUTY TREASURER

GORHAM BROOKS, A.B. 50 State St., Boston

SECRETARIES TO THE CORPORATION

FRANCIS WELLES HUNNEWELL, A.B., LL. B.
5 University Hall, Cambridge

FREDERICK LEWIS ALLEN, A.M. 5 University Hall, Cambridge

THE BOARD OF OVERSEERS

The PRESIDENT and TREASURER of the University, *ex officio*, and the following persons by election: —

1922*

WILLIAM THOMAS, A.B., LL.B. 310 Sansome St., San Francisco, Cal.

HOWARD ELLIOTT, C.E. 34 Nassau St., New York, N.Y.

JOHN PIERPONT MORGAN, A.B. 23 Wall St., New York, N.Y.

ELIOT WADSWORTH, A.B. 1718 H St., Washington, D. C.

FRANCIS LEE HIGGINSON, JR., A.B. 44 State St., Boston

1923

FRANCIS JOSEPH SWAYZE, A.M., LL.D.
765 High St., Newark, N.J.

LEONARD WOOD, M.D., LL.D., D.C.L., M.S.D.
Manila, Philippine Islands

ARTHUR WOODS, A.M. 165 East 74th St., New York, N.Y.

JEROME DAVIS GREENE, A.M. 43 Exchange Place, New York, N.Y.

FRANKLIN DELANO ROOSEVELT, A.B., LL.D. Hyde Park, N.Y.

1924

HENRY CABOT LODGE, PH.D., LL.B., LL.D.
United States Senate, Washington, D.C.

GEORGE WIGGLESWORTH, A.M., LL.B. 40 Central St., Boston

FRANCIS RANDALL APPLETON, A.B., LL.B.
26 E. 37th St., New York, N.Y.

IRA NELSON HOLLIS, A.M., L.H.D., S.D.
Worcester Polytechnic Institute, Worcester

PAUL REVERE FROTHINGHAM, A.M., S.T.B.
294 Beacon St., Boston

* The term expires, in each case, on Commencement Day of the year indicated.

1925

EDWARD HICKLING BRADFORD, A.M., M.D.
220 Beacon St., Boston

OWEN WISTER, A.M., LL.B., LL.D., L.H.D.
1004 West End Trust Building, Philadelphia, Pa.

JULIAN W. MACK, LL.B. Woolworth Building, New York, N.Y.

THOMAS WILLIAM LAMONT, A.B. 23 Wall St., New York, N.Y.

ELLERY SEDGWICK, A.B. 8 Arlington St., Boston

1926

WILLIAM ROSCOE THAYER, A.M., LL.D., L.H.D., LITT.D.
8 Berkeley St., Cambridge

EDWIN FRANCIS GAY, PH.D., LL.D.
1261 Madison Ave., New York, N.Y.

LOUIS ADAMS FROTHINGHAM, A.B., LL.B.
House of Representatives, Washington, D. C.

NORWOOD PENROSE HALLOWELL, A.B. 44 State St., Boston

ROGER WOLCOTT, 60 State St., Boston

1927

EDGAR CONWAY FELTON, A.B. Haverford, Pa.

HOMER GAGE, A.B., M.D., A.M. 8 Chestnut St., Worcester

LANGDON PARKER MARVIN, A.B., A.M., LL.B.
52 Wall St., New York, N.Y.

JAMES JACKSON, A.B. State House, Boston

CHARLES H. BRENT, S.T.D. 237 North St., Buffalo, N.Y.

SECRETARY OF THE BOARD OF OVERSEERS

WINTHROP HOWLAND WADE, A.M., LL.B. 99 State St., Boston

FACULTY *

Abbott Lawrence Lowell, LL.B., LL.D., Ph.D., President, 17 Quincy St., Cambridge

David L. Edsall, M.D., S.D., Dean, and *Jackson Professor of Clinical Medicine*, Massachusetts General Hospital

Milton J. Rosenau, M.D., A.M., *Charles Wilder Professor of Preventive Medicine and Hygiene*, 65 Naples Road, Brookline

George C. Whipple, S.B., *Gordon McKay Professor of Sanitary Engineering*, 6 Berkeley Place, Cambridge

Richard P. Strong, M.D., S.D., *Professor of Tropical Medicine*, Harvard Medical School

Walter B. Cannon, M.D., *George Higginson Professor of Physiology*, Harvard Medical School

Ernest E. Tyzzer, M.D., *George Fabyan Professor of Comparative Pathology*, Harvard Medical School

C. Macfie Campbell, M.D., *Professor of Psychiatry*, 58 Lake View Ave., Cambridge

Lawrence J. Henderson, M.D., *Professor of Biological Chemistry*, 4 Willard St., Cambridge

Edwin B. Wilson, Ph.D., *Professor of Vital Statistics*, Harvard Medical School

Roger I. Lee, M.D., *Henry K. Oliver Professor of Hygiene*, 7 Lowell St., Cambridge

Cecil K. Drinker, M.D., *Associate Professor of Applied Physiology*, 22 Evans Way, Boston

The names of other officers of instruction will be found under the list of those giving instruction in the several courses.

* Arranged, with the exception of the President and Dean, on the basis of collegiate seniority.

ADMINISTRATIVE OFFICERS

President: Abbott Lawrence Lowell, ll.b., ll.d., ph.d.
Office, 5 University Hall, Cambridge.

Dean: David L. Edsall, m.d., s.d.
Office, Room 104, Administration Building, Medical School. Office hours by appointment.

Secretary: Susan C. Lyman.
Office, Room 108, Administration Building, Medical School.

ADMINISTRATIVE BOARD

President, A. Lawrence Lowell, ll.b., ll.d., ph.d. (*ex-officio*).

Dean, David L. Edsall, m.d., s.d. (*ex-officio*) *Chairman.*

Milton J. Rosenau, m.d., a.m., *Professor of Preventive Medicine and Hygiene.*

Edwin B. Wilson, ph.d., *Professor of Vital Statistics.*

Roger I. Lee, m.d., *Professor of Hygiene.*

Cecil K. Drinker, m.d., *Associate Professor of Applied Physiology.*

THE HARVARD SCHOOL OF PUBLIC HEALTH

HISTORICAL STATEMENT

The School of Public Health of Harvard University is the outgrowth, indeed the direct continuation, of the School of Public Health of Harvard University and the Massachusetts Institute of Technology, established in 1913. Prior to this, the Harvard Medical School offered courses leading to the degree of Doctor of Public Health, which was conferred for the first time in 1911. The interest of Harvard University in public health education was shown as early as 1909 by the establishment of a Department of Preventive Medicine and Hygiene, and of a Department of Sanitary Engineering in 1911. Even before this, the Department of Biology and Public Health of the Massachusetts Institute of Technology trained men for public health careers. The cooperation between the Massachusetts Institute of Technology and Harvard University in a School of Public Health resulted in a successful enterprise which showed steady growth.

In order to meet the needs for research and teaching in certain branches of public health work, Harvard University established a School of Tropical Medicine in 1913, and somewhat later (1918) organized a Division of Industrial Hygiene, which operated both in the Medical and Public Health Schools. As a result of these developments, which have been administered from and mainly housed in the Harvard Medical School, the University found itself in possession of a substantial nucleus upon which to erect a new School of Public Health of larger scope,and in 1921 received from the Rockefeller Foundation a generous endowment for this purpose, known as the Henry P. Walcott Fund of Harvard University.

From this brief historical sketch, it will be noted that the School of Public Health grew and developed to a large extent out of the activities of Harvard University, and remains closely associated with its Medical School. It is believed that this coöperation between the Medical and Public Health Schools will be mutually beneficial. Despite the close association of the two Schools, each will have its own faculty and to a certain extent its own buildings and laboratories.

The School of Public Health of Harvard University is now organized and in September, 1922, will open its doors prepared to offer systematic courses of instruction and appropriate degrees.

GENERAL STATEMENT

It is the object of the School of Public Health to provide the scientific groundwork of expert knowledge which underlies efficient health administration together with some actual personal acquaintance with modern public health practice of the best types and thus to prepare students for careers in public health. The School of Public Health offers courses and opportunities to fit students for administrative, teaching, field, or laboratory positions. To this end, lectures, laboratory work, hospital exercises, field surveys, and other forms of instruction are offered by members of the Faculty and by special instructors actively engaged in public health work. Coöperation will also be maintained with federal, state, and local health departments, and with hospitals and other agencies. Favorable opportunity will be given to those who desire to contribute to knowledge through laboratory research or field investigation.

It is recognized that the students coming to the School will differ widely in their previous training, in their capacity, and in their desires. Opportunity is therefore offered to follow programs of study in accordance with individual requirements. Each student will be assigned to a member of the Faculty for advice and guidance in selecting his program, which must finally have the approval of the Administrative Board of the School. It will thus be possible for those who desire to specialize in Vital Statistics, Sanitary Engineering, Epidemiology, Public Health Bacteriology, Mental Hygiene, Child Hygiene, etc., to arrange desirable programs. In the cases of Tropical Medicine and Industrial Hygiene special bulletins have been prepared in order to suggest definite plans for work in these fields. Such bulletins, however, are merely illustrations of the manner in which a variety of fields may be covered. Many students will require courses not listed in this catalogue. All bulletins issued by the School, together with information as to courses not listed in this catalogue, will be supplied by the Secretary of the School of Public Health.

While the School of Public Health has a separate Faculty, it is closely coördinated with the Medical School. The minimum requirements for entrance to courses leading to degrees are essentially those for entrance to the Medical School, and in addition certain of the fundamental medical sciences. The medical degree is not a prerequisite except in the case of students who matriculate for the Doctorate in Public Health. Candidates are, however, advised to obtain the medical degree before specializing in public health work. Experience teaches that at present preferment for employment and advancement to the higher positions

come more readily to those who possess a medical degree. The degrees of Doctor of Philosophy in Hygiene and Doctor of Medical Sciences, which do not require the medical degree, are appropriate for those who wish to pursue productive scholarship or research.

Boston affords unusual opportunities to study the operation and administration of state and municipal departments of health, including laboratory work. In connection with the Port of Boston, the Federal Government maintains maritime quarantine, immigration, medical, and other health services. There are several large hospitals available for study and research in the communicable diseases, and abundant material for study of problems of mental hygiene may be found at the Psychopathic Hospital and at the Massachusetts School for Feebleminded at Waverley. In Boston are found the health problems of a metropolitan center, and within easy reach those of large and small towns, as well as of country districts. Boston is an industrial center, and its varied industries serve the purpose of industrial hygiene and industrial medicine. All the usual philanthropic health activities, such as baby hygiene stations, the Red Cross, anti-tuberculosis organizations, district and public health nursing services, and many other similar agencies are active in and around Boston. The School of Public Health will be able to take advantage of these and other special opportunities.

The School of Public Health is particularly fortunate in maintaining close coöperation with the Massachusetts Institute of Technology. A group of courses given at the Massachusetts Institute of Technology not listed in this catalogue will be open to the students in the Harvard School of Public Health and may, with the approval of the Administrative Board, be included in a general program and will be counted toward a degree. Further information in regard to these courses may be had upon application to the Secretary of the Harvard School of Public Health.

ADMISSION REQUIREMENTS

Prospective students must satisfy the Committee on Admission of their fitness both in character and academic attainments to pursue profitably an approved program looking towards a definite objective.

The candidates for the several degrees must satisfy the Committee on Admission of their academic fitness (1) by a medical degree from an approved medical school, or (2) by evidence of adequate training in English and other modern languages, physics, inorganic organic and bio-chemistry, biology, anatomy, histology, physiology, pathology, and bacteriology. The training indicated under (2) represents the minimum requirements for entrance to the Harvard Medical School, plus certain

of the fundamental medical sciences of the first two years of the Medical School.

The mere completion of courses is not ordinarily satisfactory evidence of the fitness of a prospective student. The Committee on Admission may require further evidence of present ability to utilize the training received, and ability to profit by the courses administered by the School. The medical degree (M.D.) is a prerequisite for the degree of Doctor of Public Health but not for the Bachelor of Public Health, the Master of Public Health, or the Doctor of Philosophy in Hygiene.

Those who do not meet the academic requirements for admission as candidates for degrees may be admitted as special students to certain courses and programs of study at the discretion of the Committee on Admission.

Special opportunities are offered to research students who may desire to investigate special health problems or to make surveys without reference to a degree.

DEGREES

1. Bachelor of Public Health

Prerequisites: The student must give evidence of having had satisfactory training in modern languages, physics, inorganic organic and bio-chemistry, and in biology, physiology, anatomy, histology, pathology, and bacteriology. The total courses above outlined represent about four years' work of college grade and are the requirements to candidacy for a degree in the School of Public Health.

The satisfactory completion of an approved program of at least one year in the School of Public Health will be necessary to obtain the degree of Bachelor of Public Health.

2. Master of Public Health

The master's degree represents one year of advanced work following the bachelor's degree in Public Health, or its equivalent. The candidate's program must be presented in writing and be approved by the Administrative Board. Candidates for this degree must spend a minimum of one year in residence at this University and attain a high degree of scholarship.

3. Doctor of Philosophy (in Hygiene)

The degree of Doctor of Philosophy is now granted by the Division of Medical Sciences of the Faculty of Arts and Sciences in the following special fields:

Anatomy, including comparative anatomy.
Embryology, including microscopic anatomy.
Physiology or comparative physiology.
Biological chemistry.
Pathology or comparative pathology.
Bacteriology.
Pharmacology.
Hygiene.

Properly qualified students in public health will have opportunity to obtain the Doctorate in Philosophy and may concentrate in the field most closely allied to their special interests. This degree is administered by the Faculty of Arts and Sciences and in accordance with their regulations. Candidates for the degree of Doctor of Philosophy must fulfil certain preliminary requirements, must devote to approved advanced studies not less than two years, — at least one of which must be spent in residence at this University — and must pass general examinations and present an account of original work in an accepted thesis, before being granted the degree.

4. Doctor of Medical Sciences

The degree of Doctor of Medical Sciences is administered by the Faculty of Medicine in accordance with their regulations. Further information concerning this degree may be had upon application.

The degrees of Doctor of Philosophy and Doctor of Medical Sciences are designed for those who wish to become productive scholars.

5. Doctor of Public Health

The degree of Doctor of Public Health is open only to those who have recently received a doctor's degree M.D. from an approved medical school.

The requirements for the degree include laboratory work and field surveys or their equivalent. The candidate will select one principal field of work and at least three minor fields, such as Tropical Medicine, Sanitary Engineering, Vital Statistics, Epidemiology, Preventive Medicine, Bacteriology, Parasitology, Industrial Hygiene, Child Hygiene, Mental Hygiene, etc.

Candidates for the degree of Doctor of Public Health may pursue one of two courses: (1) they may plan their work as a preparation for either administrative or teaching positions, or (2) they may concentrate on the study and investigation of a special field.

Applicants must present their proposed programs in writing for approval before they will be accepted as candidates for the degree. Special programs will be arranged to suit individual cases. Consideration may be given for work done in other institutions and for public health experience. Studies leading to the degree need not be confined wholly to the School of Public Health, but may include work in any department of the University. Ordinarily the program of study for this degree will require two academic years, at least one of which must be spent in residence at this University. The degree will not be given for mere faithful study for a prescribed time, nor for fulfilment of a program, and never for miscellaneous studies, but only for high scholarly attainment.

Each candidate will be required to present a thesis upon an approved subject.

The final examinations will be oral and will consist of a searching inquiry into the candidate's attainments in his principal field and will also include the minor subjects and any other topic within the domain of hygiene and sanitation which will test the candidate's breadth of knowledge.

FEES AND EXPENSES

The fees are: For matriculation, $5; for instruction (including laboratory charges except breakage, damage and loss of apparatus), $300 for one year (if in two payments, at the first, $180; at the second, $120); for a half-year alone, $180. The matriculation fee and the instruction fee (if in two payments, the first instalment thereof) are to be paid to the Bursar * punctually at the beginning of the academic year, without the presentation of a bill; and the second instalment is to be paid on or before January 31. On or before January 31, students are to make a deposit of $10 with the Bursar to cover charges for breakage, damage and loss of apparatus. If, at the end of a student's first four months, his breakages, etc., have been so great as to render the deposit in the Bursar's judgment insufficient to cover probable charges for the second four months, a further deposit will be required at the beginning of the second four months. *No degree can be granted until the student has paid the full tuition fee for each year in which he has been registered as a member of the School.*

Each student whose dues remain unpaid on the day fixed for their payment is required at once to cease attending lectures and using laboratories or making use of any other privileges as a student until his financial relations with the University have been arranged satisfactorily to

* The Bursar's office is at the Delta, Kirkland Street, Cambridge. Hours 9–1.

the Bursar. Failure to comply with this rule is deemed cause for final separation from the University. A student may rent a microscope from the School upon application to the Committee on Microscopes, but the School offers no guarantee that it will keep on hand a sufficient number of such instruments to furnish one for each student; students are strongly urged to buy their own microscopes. A deposit of $1 with the Dean will entitle the student to the use of a locker in the School buildings.

STILLMAN INFIRMARY FEE

Not later than October 1 in each academic year, any student may pay to the Bursar the sum of $5 for the maintenance of the Stillman Infirmary; and, on the order of a physician, every student who has taken advantage of this opportunity will be given, in case of sickness, in return for the fee, a bed in a ward, board, and ordinary nursing for a period not exceeding two weeks in any one academic year.

The Medical School provides a physician to students who will give physical examination or medical treatment without charge during his office hours, from 12 to 1 o'clock on Mondays, Wednesdays, and Fridays, Room 101, Building B II, or at other times by appointments.

BOND REQUIRED OF STUDENTS

Every student is required to file with the Bursar on his entrance to the School a bond of $50 executed by two sufficient bondsmen (one of whom must be a citizen of the United States), or to deposit $50 in money, to cover the loss or injury of any property belonging to the University, or for which it is responsible. If the student desires to rent a microscope a bond of $100 must be filed instead of one of $50. Blank forms of bonds may be obtained at the Dean's Office or from the Bursar. No officer or student of the University is accepted as a bondsman. *Students will be held responsible for the payment of fees until they have notified the Dean, in writing, of their intention to withdraw from the School and have subsequently received their bond from the Bursar.*

LOCATION AND BUILDINGS

The School of Public Health will be located temporarily in the buildings of the Harvard Medical School, 240 Longwood Avenue, Boston.

The students of the School of Public Health will have the privilege of the full use of the Harvard Medical School Buildings including the Library, Recreation Room, Museum, Lunch Room, etc.

The Medical School is on the outskirts of the City of Boston next to the country suburb of Brookline. Although there are no dormitories for the students at the Harvard School of Public Health, a great variety of living facilities are available nearby. The Medical School owns and operates a cafeteria in the Administration Building where students may obtain luncheon and there are restaurants in the neighborhood should a man prefer to take all his meals outside.

The Medical School Buildings occupy eleven acres on Longwood Avenue, Boston, and are five in number: — one is designed for administrative and four for laboratory purposes. The Administration Building contains the necessary offices, several lecture rooms, the Library, and the Warren Anatomical Museum. The laboratory buildings provide extensive accommodations for various departments grouped in the buildings as follows: (1) anatomy, comparative anatomy, histology and embryology; (2) physiology, biological chemistry, medicine, and surgery; (3) pathology, bacteriology, neuropathology, and tropical medicine; (4) preventive medicine and hygiene, pharmacology, and comparative pathology.

LIBRARIES

The Library of the School of Public Health will be combined with the central library of the Harvard Medical School. This library is housed in Charles B. Porter Hall in the Administration Building, and in the other buildings are branch libraries. By an arrangement with the Peter Bent Brigham Hospital the library facilities of the two institutions are combined in the central library. This library is open from 9 A.M. until 10 P.M., on Saturdays from 9 A.M. until 1 P.M. The present number of volumes in the library is 35,666, and in addition there are 71,393 pamphlets and 290 current periodicals kept on file.

The College Library at Cambridge is open to the students of this School.

The Boston Public Library is open to students who are inhabitants of Boston. Students, not inhabitants of Boston, who have filed a bond at the Bursar's office, or deposited with the Bursar the sum of fifty dollars, may also use this library. The Bursar will furnish on application the necessary certificate of bond or deposit.

The Boston Medical Library, No. 8, The Fenway, contains about 84,000 bound volumes and 56,000 pamphlets, and nearly 650 current periodicals are on file. This very valuable library is open to those who desire to consult medical literature, on week days from 9.30 A.M. to 10 P.M., on Saturdays till 6 P.M.

FELLOWSHIPS

A limited number of fellowships of $1200 each will be offered.

Applications for fellowships should be filed with the Secretary of the School of Public Health at least four months prior to the opening of the School.

ANNOUNCEMENT OF COURSES

BACTERIOLOGY

—— ——, *Professor of Bacteriology* and assistants.

Samuel C. Prescott, B.S., *Professor of Biology and Public Health at Massachusetts Institute of Technology.*

M. P. Horwood, Ph.D., *Instructor in Biology and Public Health at Massachusetts Institute of Technology.*

Bacteriology A 1

Three afternoons a week (Monday, Wednesday, and Friday) for four months (October, November, December, and January).

This course is the regular Medical School course and provided there is adequate accommodation, is open for students in the School of Public Health who are insufficiently prepared in bacteriology and immunology.

General and Sanitary Bacteriology A 2

Three afternoons a week (Monday, Wednesday, and Friday) for five months (October, November, December, January, and February). Professor Prescott and Dr. Horwood.

A fundamental course in the biology of the bacteria, with thorough laboratory study of selected types. The preparation of culture media, methods of bacteriological technique, staining methods and the various biochemical tests employed are considered in detail. The latter two thirds of the course are devoted to the special study of the bacteriology of water, sewage, air, and foods, and the methods of examination and interpretation of results.

This course is given at the Massachusetts Institute of Technology.

Research in Bacteriology C *

CHILD HYGIENE

Richard M. Smith, M.D., *Instructor in Pediatrics.*

With the coöperation and assistance of special lecturers, instructors, and assistants.

* Courses in research are designated as C courses. These courses are only open to properly qualified students, and arrangements must be made in each individual case with the head of the department.

Child Hygiene A

This course will be given during the month of March. It will occupy all of the time during the month except that given to certain courses continuing throughout the year, on Tuesday and Thursday afternoons. Additional time may be given to this subject by special arrangement with Dr. Smith.

Instruction will consist in lectures and conferences, and in observation of work in the field done under public and private direction.

The State Department of Public Health offers facilities for the study at first hand of a well organized Division of Child Hygiene.

The Boston Baby Hygiene Association illustrates the methods of work used in private organizations.

Visits will be made to a Health Unit of the Boston Department of Health and to the headquarters of the Boston Health League.

Prenatal clinics, post-natal baby clinics, child welfare clinics, and work among school children will be demonstrated in actual operation.

Illegitimacy will be presented through the work of the Florence Crittenton Home.

Retarded mental development will be discussed in connection with visits to the State School at Waverley and to the Judge Baker Foundation.

Lectures on other special subjects of child hygiene will be given and visits made to associations in and near the city.

Research in Child Hygiene C

COMMUNICABLE DISEASES

Edwin H. Place, M.D., *Assistant Professor of Pediatrics.*

Communicable Diseases A

Five mornings a week for two months (April and May).

The course will be blocked out in such a manner that individual students may take single sections of the work.

Practical experience will be given at the South Department, Boston City Hospital, in the diagnosis, means of isolation, and care of scarlet fever, measles, and diphtheria, supplemented by special exercises in various clinics on pneumonia, typhoid fever, influenza, infantile paralysis, tuberculosis, and venereal diseases.

Communicable Diseases B

Special work, for example by interneship in the South Department, Boston City Hospital.

Research in Communicable Diseases C

Research opportunities will be available in practically all the lines enumerated in *A*.

EPIDEMIOLOGY

Epidemiology and Public Health Laboratory Methods

Milton J. Rosenau, M.D., *Professor of Preventive Medicine and Hygiene.*

G. Benjamin White, Ph.D., *Instructor in Preventive Medicine and Hygiene. Director of the Antitoxin and Vaccine Laboratory, State Department of Public Health.*

William A. Hinton, M.D., *Instructor in Preventive Medicine and Hygiene. Assistant Director of the Wassermann Laboratory, State Department of Public Health.*

Harold E. Smiley, M.D., *Charles Follen Folsom Teaching Fellow in Hygiene.*

Robert N. Nye, M.D., *Assistant in Preventive Medicine and Hygiene. Assistant Director of the Antitoxin and Vaccine Laboratory, State Department of Public Health.*

Others to be appointed.

Epidemiology A

Lectures and demonstrations — from January to April, inclusive, Tuesday and Thursday afternoons, 4 to 5.
Field and Practical Work.— afternoons in April.

This course consists of lectures, demonstrations, and field work. The following subjects will be considered: the epidemiology of a selected group of communicable diseases; the epidemiology of milk, water, air and soil-borne infections; the seasonal prevalence of disease; the geography of disease; disinfection and disinfectants; management of an epidemic campaign, quarantine and isolation, practical problems.

Epidemiology B

Advanced work. By arrangement with Professor Rosenau.

This consists in special investigations of a particular disease or problem from both the field and the laboratory standpoints.

Public Health Laboratory Bacteriology A

Three afternoons a week (Monday, Wednesday and Friday) for one month (February).

A laboratory course of the methods commonly used in public health laboratories for the following diseases: typhoid fever, tuberculosis, gonorrhea, syphilis, diphtheria, pneumonia, cerebrospinal fever, the Wassermann reaction, rabies, etc.

Preventive Medicine and Hygiene A

One afternoon a week (Friday) 2 to 3 for one month (January).

Two afternoons a week (Monday and Friday(2 to 3 for four months (February, March, April, and May).

This is a general course given to the third year medical students, consisting of lectures, demonstrations and a sanitary survey. The course is designed to give a bird's-eye view of the important facts and principles. The subjects covered are those found in Rosenau's "Preventive Medicine and Hygiene." The sanitary survey forms an integral part of this course.

Students are expected to have this course or its equivalent before taking Epidemiology *A*.

Wassermann Laboratory Work B and C

Dr. W. A. Hinton.

Lectures, demomstrations and actual laboratory work on the Wassermann reaction and the diagnosis of rabies will be given as part of the course in public health laboratory bacteriology.

Special arrangements may be made for further or advanced work for those who desire special training in this field, by consultation with the head of the department and with Dr. Hinton.

Antitoxin and Vaccine Laboratory Work B and C

Drs. G. Benjamin White and Robert N. Nye.

Exercises consisting mainly of demonstrations of the production and testing of vaccine virus, diphtheria antitoxin, pneumococcus and antimeningococcic sera and other biologic products will be given as part of the course in public health laboratory bacteriology. Opportunities will be afforded for those who desire special or research work in this field, by arrangement with the head of the department and with Dr. White.

Research in Epidemiology C

INDUSTRIAL HYGIENE

WADE WRIGHT, M.D., *Instructor in Industrial Medicine.* With the co-operation and assistance of special lecturers, instructors, and assistants.

Industrial Hygiene A

Daily, all day for one month (March) with the exception of Tuesday, Thursday, and Saturday afternoons.

This course is outlined for students in Public Health not necessarily preparing for the field of industrial medical practice, but desiring a review of the problems and methods of industrial medicine.

This work will require ninety-six hours, of which half are to be devoted to didactic instruction and half to clinics, demonstrations, and visits to industrial and mercantile establishments.

Industrial Medicine ..... *22 hours*

Industrial Toxicology. Asst. Professor ALICE HAMILTON. Twelve hours. A series of lectures upon the more important industrial poisons, including lead and other metallic poisons, and various organic poisons.

Clinical Industrial Medicine. Dr. WADE WRIGHT. Four hours. Lectures upon certain specific industrial diseases.

Clinics, Industrial Clinic. Dr. WADE WRIGHT. Six hours. Massachusetts General Hospital. Observation of cases of industrial disease and of methods for the study of industrial morbidity.

Industrial Medical Practice ..... *12 hours*

Industrial medical service, including dispensary organization, personnel, methods and records; physical examinations, industrial psychiatry, health education. Dr. W. IRVING CLARK, Jr., Asst. Professor STANLEY COBB, Dr. WADE WRIGHT. Eight hours.

Nutrition, industrial cafeterias, Dr. ALICE F. BLOOD. Two hours.

Mercantile Health Work. Dr. ARTHUR B. EMMONS, 2d. Two hours.

Factory Hygiene ..... *14 hours*

Ventilation, exhaust systems, humidity, dust determinations. Four lectures, 1 demonstration, seven hours. Mr. PHILIP DRINKER.

Illumination. Photometric determinations. Two lectures, one demonstration, five hours. Dr. WADE WRIGHT.

Sanitary Installations, rest rooms, etc. One hour. Dr. WADE WRIGHT.

Industrial seating. One hour. Dr. ARTHUR B. EMMONS, 2d.

Industrial Operation . . . . . *8 hours*
Industrial organization and methods. Mr. Erwin Schell.

Labor Legislation . . . . . *4 hours*
Workmen's compensation laws.
Women and Children in Industry. Dr. Wade Wright.

Field Investigation . . . . . *36 hours*
Visits to representative industrial and mercantile establishments for study and observation. Eight half days and two whole days. Dr. Wade Wright.

Industrial Hygiene B

For students who desire to specialize in Industrial Hygiene or Industrial Medicine, special programs of study will be available to meet individual needs. These programs may be developed to lead to the several degrees offered by the School.

A special pamphlet on Industrial Hygiene is published by the Division of Industrial Hygiene and may be had upon application to the Secretary of the School.

Research in Industrial Hygiene C

Opportunities for research will be open to properly qualified students. Such work may be carried on in connection with the Industrial Clinic at the Massachusetts General Hospital, or with Professor Roger I. Lee at Harvard College where the work would concern the problem of caring for the health of a special group, the University students. Laboratory and other fields of research are also available.

INDUSTRIAL TOXICOLOGY

Alice Hamilton, M.D., *Assistant Professor of Industrial Medicine.*

Industrial Toxicology A

Three afternoons a week (Monday, Wednesday, and Friday) for two months (December and January).

An advanced course which will include lectures, conferences, and assigned reading upon the industrial poisons together with visits to factories and definite studies of field conditions. This course will be suitable for students who desire to concentrate in the subject of Industrial Hygiene.

Research in Industrial Toxicology C

MENTAL HYGIENE

C. Macfie Campbell, M.D., *Professor of Psychiatry.*

With the coöperation and assistance of special lecturers, instructors, and assistants.

Mental Hygiene A

Daily, all day for one month (February) except Tuesday, Thursday, and Saturday afternoons.

This course, under the direction of Professor Campbell, offers the student opportunity for becoming familiar with the general field of mental hygiene and with its relations to other aspects of public health.

Mental Hygiene covers not only the traditionally recognized conditions of mental disorders ("Insanity") and defect (Feeblemindedness"), it also deals with manifold forms of apparent physical incapacity (including the "psychoneuroses"), with many social problems (prostitution, alcoholism, vagrancy), with maladjustments in home, in school, in industry.

The course will include a review of the fundamental principles of abnormal psychology, of the main types of mental abnormality, of the prevention, management and treatment of the personal and social factors involved in these disorders, and of the organization by the community of the necessary facilities for dealing with these problems.

The course will consist of lectures, clinical demonstrations, visits to hospitals, courts and other organizations, with supervised reading and opportunities for intensive clinical study along special lines (neurosyphilis, school hygiene, delinquency).

Elementary Mental Hygiene

Mondays 4–5 for three months (March, April and May).

This is a preliminary course on Medical Psychology given to the first year medical students, consisting of lectures by Professor C. Macfie Campbell, M.D.

Research in Mental Hygiene C

PARASITOLOGY

Ernest E. Tyzzer, M.D., *Professor of Comparative Pathology.*

Marshall Fabyan, M.D., *Assistant Professor of Comparative Pathology.*

Cesar Guzman, M.D., *Assistant in Comparative Pathology.*

Parasitology A

Three afternoons a week (Monday, Wednesday, and Friday) for one month (February).

The student is trained to identify the more important parasites as they appear in the various stages of their development. The diseases of the human being due to parasitic protozoa are also considered with especial reference to their identification and life cycles. Human material, cultures, and experimentally infected animals are utilized in the study of these micro-organisms. The ectoparasites, especially those concerned in the production or transmission of human diseases, are considered as fully as the allotted time will allow.

Parasitology B

Five mornings a week for three months (March, April, and May).

This course will cover the protozoa, helminthes, and arthropoda concerned in human disease, and also certain animal diseases transmitted to man. The instruction will be adapted to the needs of graduate and special students.

Research in Parasitology C

THE LABORATORIES OF PHYSIOLOGY

GENERAL STATEMENT

In the Laboratories of Physiology of the Harvard Medical School, the Departments of Physiology, of Comparative Physiology, of Applied Physiology, and of Physical Chemistry coöperate in offering courses of instruction and opportunities of research. These are planned to meet the requirements of three classes of students: (1) Medical students, (2) Students in the School of Public Health, (3) Graduate students in the Medical Sciences, Biology, Psychology, and allied sciences.

Formal instruction in the fundamental facts and conceptions of physiology is offered in the First-Year Medical Course which, although designed primarily to meet the needs of medical students, may profitably be taken by other suitably prepared students enrolled in the Graduate Schools of the University. In addition, a series of short courses are given to meet the needs of those who, having become familiar with the more elementary principles of physiology, desire more advanced and comprehensive study of special topics of primary importance. These are available for election by second, third, and fourth-year medical students, and are given at times which conform to the group system in use in other parts of the University, so that they may be taken by graduate students without serious conflict. The requirements of students in the School of Hygiene are fully met by these advanced courses. Facilities are available for research in the biological and physico-chemical problems of general physiology, in comparative physiology, mammalian physiology, and the physiological problems of general and industrial hygiene.

For further information regarding the Laboratories of Physiology, inquiries should be addressed to Dr. Alfred C. Redfield, Chairman of the Laboratories of Physiology, Harvard Medical School, Boston, Mass.

INSTRUCTORS

PHYSIOLOGY

Walter B. Cannon, M.D., *George Higginson Professor of Physiology.*
Alexander Forbes, M.D., *Associate Professor of Physiology.*
Percy G. Stiles, Ph.D., *Assistant Professor of Physiology.*
Alfred C. Redfield, Ph.D., *Assistant Professor of Physiology.*
Fred R. Griffith, A.M., *Teaching Fellow in Physiology.*

COMPARATIVE PHYSIOLOGY

William T. Porter, M.D., LL.D., S.D., *Professor of Comparative Physiology.*

APPLIED PHYSIOLOGY

Cecil K. Drinker, M.D., *Associate Professor of Applied Physiology.*
Joseph C. Aub, M.D., *Assistant Professor of Applied Physiology.*
Lawrence T. Fairhall, Ph.D., *Instructor in Applied Physiology.*
Philip Drinker, B.S., Ch.E., *Instructor in Applied Physiology.*
Robert M. Thomson, *Assistant in Applied Physiology.*

PHYSICAL CHEMISTRY

Lawrence J. Henderson, M.D., *Professor of Biological Chemistry.*
Edwin J. Cohn, Ph.D., *Assistant Professor of Biological Chemistry.*
Ronald M. Ferry, M.D., *Fellow for Research in Biological Chemistry.*

ADVANCED COURSES

A series of advanced courses on special topics in physiology, each of one month's duration, will be given on Tuesday and Thursday afternoons. They may be elected by second, third, and fourth-year medical students and by others who can satisfy the instructors of their fitness to profit by them. They are also designed to fill the requirements for physiological instruction in the School of Hygiene.

Previous training in physiology is a requisite for admission to any of these advanced courses.

PHYSIOLOGY B

B1. Circulation — Associate Professor C. K. Drinker.

October: Tuesday and Thursday afternoons from 2 until 4.

The following topics will be discussed, the lectures being accompanied by demonstrations and amplified by assigned reading. Previous experience in pathology as well as in physiology is necessary for admission to the course.

1. The fundamental properties of muscle as expressed in the heart. Development and physiology of the conducting mechanism.
2. The cardiac nerves.
3. The physiology of disturbances in rhythm. Rate and output adjustment of the heart.
4. The organization of the circulation. Vascular reflexes.
5. The capillary circulation.
6. The pulmonary circulation.
7. The cerebral circulation.
8. Methods of estimating circulatory efficiency.

B2. Physical Chemistry of the Blood — Professor L. J. Henderson.

November: Tuesday and Thursday afternoons from 2 until 4.

A discussion of the application of physical chemistry in the study of blood including acid-base equilibrium, the transport of oxygen and carbonic acid and the exchange of dissolved substances between corpuscles and plasma.

B3. Respiration — Assistant Professor A. C. Redfield.

December: Tuesday and Thursday afternoons from 2 until 4.

A series of lectures dealing with the pulmonary respiration and the circulation of the blood in their relation to the gaseous exchange of the

body. The phenomena of ventilation of the lung, the exchange of gas across the pulmonary epithelium, the transport of gases by the blood, the circulation rate, and the respiratory exchange between blood and tissue will be considered in their quantitative relation to one another and to the metabolism of the organism as a whole.

Laboratory exercises illustrating the problems discussed in the lectures may be elected by a limited number of students.

B4. Metabolism and Nutrition — Assistant Professor J. C. Aub.

January: Tuesday and Thursday afternoons from 2 until 4.

A series of eight lectures will be given on the following topics. In addition a limited number of students may elect laboratory work in which they will be given opportunity to study the gas exchange in the lungs and blood, and the determination of the basal metabolic rate, with the effects of food, temperature, and exercise upon them.

1–2. The basal metabolism.
3. The control of the metabolic rate by the nervous and endocrine systems.
4. Normal diets and the effects of under nutrition.
5–6. Protein, carbohydrate, and fat metabolism.
7. Vitamines.
8. Diabetes.

B5. The Endocrine Glands — Professor W. B. Cannon.

February: Tuesday and Thursday afternoons from 2 until 4.

Eight conferences will be held, with demonstrations and reports on assigned reading. The topics considered will include the effects of the endocrine glands on nutrition, growth, muscular efficiency, and on sexual development and activity; the nervous control of internal secretion and the circumstances thereby affecting it; the interrelations of endocrine glands; the present evidence for substitution therapy; and a critical survey of the inference drawn from the physiological effects of organ extracts.

B6. Physical Chemistry of Physiological Processes — Assistant Professor E. J. Cohn.

March: Tuesday and Thursday afternoons from 2 until 4.

The physical chemistry of the cell, of certain of its constituents, and of the blood, will be considered. The effect of electrolytes upon cells and tissues and the interrelations between the constituents of the blood will be studied from the point of view (*a*) of the equilibria that obtain

between electrolytes and proteins, and (*b*) the rôle of the cell membrane in such equilibria.

Opportunity will be given for the review of certain of the elements of physical chemistry.

B7. Demonstrations in Mammalian Physiology — Professor W. T. Porter.

April: Tuesday and Thursday afternoons from 2 until 4.

Demonstrations and informal discussions on the following topics:

1. Vessels of Thebesius.
2. Closure of coronary arteries.
3. Isolated ventricular muscle.
4. Tonus of heart muscle.
5. Vasomotor centre.
6. Spinal vasomotor paths.
7. Depressor nerve.
8. Intraventricular pressure.

B8. Fundamental Principles underlying the Activity of the Nervous System — Associate Professor A. Forbes.

April: Tuesday and Thursday afternoons from 2 until 4.

The lectures will deal with the properties of excitation and conduction as exhibited by the neuromuscular mechanism, and the possibility of applying the principles which emerge from this study to the interpretation of reflex action. They will consider the nature of the excitatory process and of the nerve impulse, conduction in nerve, muscle, junctional tissue and in the reflex arc. They will be supplemented by demonstrations or laboratory exercises illustrating quantitative methods applicable to the study of neuromuscular activity, including the use of electrical recording apparatus.

B9. Fatigue and Repair — Associate Professor C. K. Drinker.

May: Tuesday and Thursday afternoons from 2 until 4.

A series of lectures and demonstrations will deal with the following topics:

1–2. The physiology of excitation and conduction in nerve and muscle.
3. The physiology of muscular contraction.
4. The nature of voluntary movement.
5. Sources of energy in muscular work.
6. Practice and training.
7–8. Present methods for field estimations of fatigue and repair.

Research in Physiology C

PUBLIC HEALTH ADMINISTRATION

MILTON J. ROSENAU, M.D., *Professor of Preventive Medicine and Hygiene.*

Public Health Administration A

(This course is not yet completely organized, and therefore this statement is tentative.)

Tuesday and Thursday afternoons, 4 to 5, October to January inclusive. Tuesday and Thursday afternoons, 4 to 5, in May.

This course consists of lectures, demonstrations, and practical field work, given mainly by health officers actively engaged in the work of health administration. The federal, state, municipal and rural situations will be covered; the historical development, budgets and budget making, economic problems, and hospital administration will be discussed; special lectures upon Sanitary Law by a member of the Faculty of the Harvard Law School will be part of this course. The lectures on Public Health Education will be given by Mr. C. E. Turner, Assistant Professor of Biology and Public Health at the Massachusetts Institute of Technology. The field work will consist of surveys, observational exercises and practical work in one or more health departments, illustrating various types of public health administration. Cooperation with the Massachusetts State Department of Public Health is being arranged.

The afternoons of May will be devoted to practical work. Opportunities may be arranged during the summertime for further practical exercises in health organizations.

Research in Public Health Administration C

SANITARY ENGINEERING

GEORGE C. WHIPPLE, S.B., *Professor of Sanitary Engineering.*
GORDON M. FAIR, S.B., *Instructor in Sanitary Engineering.*
MELVILLE C. WHIPPLE, *Instructor in Sanitary Chemistry.*

The Principles of Sanitary Engineering A

Five mornings a week for two months (October and November) at Pierce Hall, Cambridge.

Professor WHIPPLE and Mr. FAIR.

A course of lectures and laboratory work arranged especially for students in the School of Public Health. The lectures will cover the following topics: — (*a*) Municipal Sanitation; (*b*) Water Supply and

Water Purification; (*c*) Plumbing; (*d*) Sewerage and Sewage Treatment; (*e*) Disposal and Treatment of Wastes; (*f*) Building Sanitation; (*g*) Rural Sanitation.

In the laboratory the students will have opportunity to become familiar with the apparatus and instruments used in connection with studies of water purification and sewage treatment; they will be taught how to interpret water analyses and how to read engineering plans. In the field they will be taught how to make sketches and reports of engineering works. Arrangements will be made for students to visit water purification works, sewage treatment works and other works of sanitation in the vicinity of Boston, accompanied by an instructor.

Water and Sewage Analysis B

Five mornings a week for one month (February) at Pierce Hall, Cambridge.

Mr. Melville C. Whipple and Mr. Fair.

A short practical course of lectures and laboratory work for those students who desire to supplement the course in Sanitary Engineering by a further study of water, sewage, and waste analysis. Especial attention will be given to the use of analyses in the control of processes of water purification, sewage treatment works, and to the interpretation of analytical results. The topics covered will be Color, Turbidity and Odor of Water; Microscopic Examinations; Bacterial Counts and Tests for B. Coli; Dissolved Oxygen and Carbonic Acid; Hardness; Chlorine, the Nitrogen Cycle, etc.

Research in Sanitary Engineering C

Opportunities for investigation in the various fields of sanitation are available for properly qualified students under the direction of the instructors.

Courses in the Harvard Engineering School

Several graduate courses in the Sanitary Engineering Department of the Harvard Engineering School are open to properly qualified students in the School of Public Health. (See catalogue of the Engineering School.)

TROPICAL MEDICINE

Richard P. Strong, Ph.B., M.D., S.D., *Professor of Tropical Medicine.*
Andrew W. Sellards, A.M., M.D., *Assistant Professor of Tropical Medicine.*
George C. Shattuck, M.D., *Assistant Professor of Tropical Medicine.*

Tropical and Exotic Medicine A

Three afternoons a week (Monday, Wednesday, and Friday) for two months (December and January).

The course consists of lectures, laboratory work, and clinical instruction.

The most important infectious and other preventable diseases of tropical and exotic countries will be dealt with from the following points of view:

1. The etiology, principles, and modern methods of diagnosis.
2. The methods of transmission and mode of spread.
3. The hygienic problems involved in their control and prevention.
4. The administrative and practical measures to be employed in the control of these diseases under endemic and epidemic conditions.
5. The value of a knowledge of the methods of diagnosis, methods of transmission, prevention, and treatment of the tropical diseases of men and animals in connection with the study, prevention, and treatment of the human infectious diseases in general.

Advanced Work in Tropical and Exotic Medicine B

For students entering the School with the intention of specializing in public health in tropical countries, a series of courses lasting eight months is provided. The program followed must include advanced courses in exotic and tropical diseases in:

1. Practical bacteriology and pathology.
2. Practical protozoölogy and helminthology.
3. Practical entomology.
4. Epidemiology (including field work).
5. Clinical, at infectious diseases hospital.

The courses in bacteriology, protozoölogy, helminthology, and entomology are fundamental in connection with the prevention and control of tropical or exotic diseases. Courses relating to tropical climatology, botany, venomous animals and the biological effects of sunlight in tropical countries will also be of advantage and of particular interest to the

health officer who desires a more cosmopolitan experience, and the need for thoroughly trained men in the field of exotic and tropical medicine is especially urgent.

The program for such advanced students will naturally vary in individual cases and must be approved by the Professor of Tropical Medicine before submission to the Administrative Board.

Prerequisite: A degree from an approved medical school is required.

Degrees: Such intensive work may be used as part of the program for a Master's or Doctor's degree.

Courses in Tropical Medicine leading to the degree of Doctor of Medical Sciences or Doctor of Philosophy in Bacteriology (concentrating in the bacteriology and pathology of the Tropical Diseases) from the Harvard Medical School are also open to students who comply with the requirements described for the degree of Doctor of Medical Sciences or Doctor of Philosophy.

Research in Tropical and Exotic Medicine C

VENTILATION AND ILLUMINATION

Philip Drinker, B.S., Ch.E., *Instructor in Applied Physiology.*
R. M. Thomson, *Assistant in Applied Physiology.*

Ventilation and Illumination A

Five mornings a week for one month (February).

This course will cover a period of four weeks. On three days a week lectures or demonstrations of about one hour each will be given. There will be an opportunity for a limited number of duly qualified students to work in the laboratory five mornings a week for one month. The subjects offered will be the following:

1. The measurement of air flow with use of the Pitot tube, Venturi meter, orifice meter, wet and dry gas meters, hot wire resistance meters, continuous recording devices and manometers.

2. Psychrometry: Determinations of humidity with wet and dry bulb psychrometers, hair psychrometers, and recording devices.

3. The use of the Kata-Thermometer.

4. Experiments in air conditioning supplemented by visits to buildings and factories using various types of air conditioning equipment.

5. Physiological aspects of air conditioning by direct experimentation with the effects of temperature, humidity, and carbon dioxide, with the application of these factors to ventilation efficiency.

6. The determination of dust fumes and smokes in air by filters, water scrubbers, Tyndallmeter, and Cottrell precipitator. The effects of particle size, count, humidity, and temperature. Commercial methods of handling dust, smoke, fumes, etc.

7. Physiological and pathological aspects of the above, illustrated by autopsies and microscopic examinations of the lungs of animals exposed to different dusts.

8. Photometric studies of illumination and illumination efficiency supplemented by visits to factories and buildings.

Duly qualified students desiring to make detailed studies in gas analysis or in special portions of the above program will be given opportunity to do so provided extra hours of work can be arranged.

Research in Ventilation and Illumination C

VITAL STATISTICS

Edwin B. Wilson, Ph.D., *Professor of Vital Statistics.*

Vital Statistics A

Five mornings a week for two months (December and January).

The elementary course in Vital Statistics will consist of lectures and laboratory work designed to familiarize the student with the facts already well established in this field, with the methods of graphical representation, and with the basic theory of probability and correlation necessary alike for the proper analysis of statistical data and for the adequate lay-out of any contemplated statistical survey.

A knowledge of the elements of the infinitesimal calculus, though not a prerequisite for the elementary course, is desirable, and is indispensable for all really critical or advanced work in statistics.

The laboratory will be fully equipped with graphical and mechanical aids available for instruction and research in Vital Statistics.

Research in Vital Statistics C

NOTE

Prospective students are reminded that courses in the Medical School and in other departments of the University will be found in the catalogs of those departments, and that courses at the Massachusetts Institute of Technology will be found in the catalog of that institution. There are many such courses which may be appropriate to students of public health desiring special types of work. Furthermore, the opportunities for special work and for research are very numerous and diversified, not only in the School of Public Health itself, and in the Harvard Medical School, but in the other departments of the University, and at the Massachusetts Institute of Technology. For such additional information which is not contained in this brief announcement, correspondence should be directed to the Secretary of the Harvard School of Public Health, Longwood Avenue, Boston, Massachusetts. In every case, students are urged to present themselves in person, at least two days before registration, so that satisfactory programs may be worked out with ample opportunity for a thorough consideration of the needs of the students.

TABULAR VIEW

	October	November	December	January
A.M.	Principles of Sanitary Engineering A	Principles of Sanitary Engineering A	Vital Statistics A	Vital Statistics A
P.M. Tuesday and Thursday	Physiology B1. 2–4 The Circulation Pub. Health Admin. A or Epidemiology A. 4–5	Physiology B2. 2–4 The Blood Pub. Health Admin. A or Epidemiology A. 4–5	Physiology B3. 2–4 The Respiration Pub. Health Admin. A or Epidemiology A. 4–5	Physiology B4 2–4 Metabolism and Nutrition Pub. Health Admin. A or Epidemiology A. 4–5
Monday, Wednesday and Friday	Bacteriology A1 Bacteriology A2	Bacteriology A1 Bacteriology A2	Bacteriology A1 Bacteriology A2 Industrial Toxicology A Tropical Medicine A	Bacteriology A1 Bacteriology A2 Prev. Medicine A. 2–3 (Fridays only) Industrial Toxicology A Tropical Medicine A
	February	**March**	**April**	**May**
A.M.	Ventilation and Illumination A Water and Sewage Analysis B Mental Hygiene A (All day)	Parasitology B Industrial Hygiene A (All day) Child Hygiene A (All day)	Parasitology B Communicable Diseases A	Parasitology B Communicable Diseases A
P.M. Tuesday and Thursday	Physiology B5. 2–4 The Endocrine Glands Pub. Health Admin. A or Epidemiology A. 4–5	Physiology B6. 2–4 General Physiology Pub. Health Admin. A or Epidemiology A. 4–5	Physiology. 2–4 Demon.—Circulation B7 Nervous System B8 Pub. Health Admin. A or Epidemiology A. 4–5	Physiology B9. 2–4 Fatigue and Repair Pub. Health Admin. A or Epidemiology A. 4–5
Monday, Wednesday and Friday	Bacteriology A2 Prev. Medicine A (Mon. and Fri. 2–3) Parasitology A Pub. Health Bact. A	Prev. Medicine A (Mon. and Fri. 2–3) Elem. Mental Hygiene (Mondays 4–5)	Prev. Medicine A (Mon. and Fri. 2–3) Elem. Mental Hygiene (Mondays 4–5) Epidemiology A. Field Work	Prev. Medicine A (Mon. and Fri. 2–3) Elem. Mental Hygiene (Mondays 4–5) Pub. Health Admin. A Field Work

Advanced courses, special courses, and courses in research are not included in this list. *This tabular view is given for convenience and should not be regarded as representing approved courses in the sense that any combination of these courses necessarily represents a satisfactory program.* Most students, and all students who are candidates for higher degrees, will want to include in the program courses not listed here, and perhaps courses not formally listed in the catalogue.

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